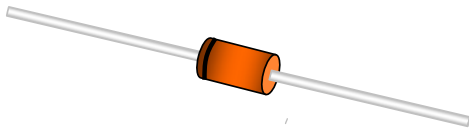


**Small Signal Diode**



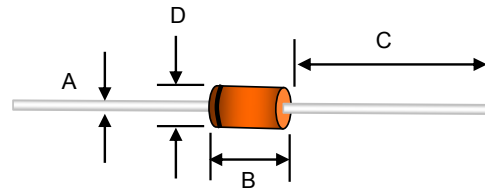
**Features**

- ✧Wide zener voltage range selection : 3.3V to 56V
- ✧V<sub>Z</sub> Tolerance Selection of ±5%
- ✧Designed for through-Hole Device Type Mounting.
- ✧Hermetically Sealed Glass.
- ✧Pb free version and RoHS compliant
- ✧High reliability glass passivation insuring parameter stability and protection against junction contamination.

**Mechanical Data**

- ✧Case :DO-41 Solder Hot Dip Tin (Sn) lead finish
- ✧Lead: Axial leads, solderable per MIL-STD-202, Method 2025
- ✧Polarity : Indicated by cathode band
- ✧Weight : 310 mg

**DO-41 Axial Lead**  
**HERMETICALLY SEALED GLASS**



Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	0.68	0.81	0.027	0.032
B	3.70	4.25	0.146	0.167
C	25.40	-	1.000	-
D	2.10	2.60	0.083	0.102

**Ordering Information**

Part No.	Package code	Package	Packing
BZX85C3V3-56	A0	DO-41	3Kpcs / Ammo
BZX85C3V3-56	R0	DO-41	5Kpcs / 14" Reel

**Maximum Ratings and Electrical Characteristics**

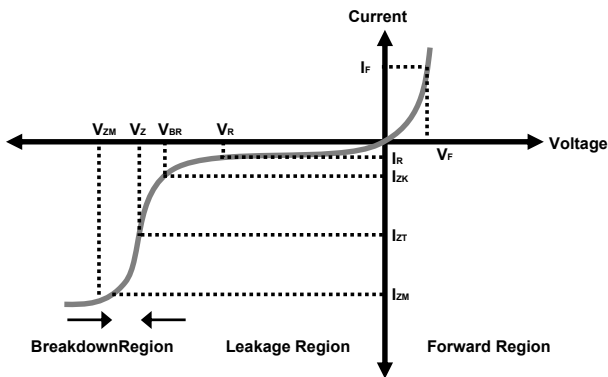
Rating at 25°C ambient temperature unless otherwise specified.

**Maximum Ratings**

Type Number	Symbol	Value	Units
Power Dissipation	P <sub>D</sub>	1.3	W
Forward Voltage	V <sub>F</sub>	1.2	V
Thermal Resistance (Junction to Ambient)	R <sub>θJA</sub>	130	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 175	°C

Notes:1. Valid provided that electrodes are kept at ambient temperature

**Zener I vs. V Characteristics**



- V<sub>BR</sub> : Voltage at I<sub>ZK</sub>
- I<sub>ZK</sub> : Test current for voltage V<sub>BR</sub>
- Z<sub>ZK</sub> : Dynamic impedance at I<sub>ZK</sub>
- I<sub>ZT</sub> : Test current for voltage V<sub>Z</sub>
- V<sub>Z</sub> : Voltage at current I<sub>ZT</sub>
- Z<sub>ZT</sub> : Dynamic impedance at I<sub>ZT</sub>
- I<sub>ZM</sub> : Maximum steady state current
- V<sub>ZM</sub> : Voltage at I<sub>ZM</sub>

**Small Signal Diode**

**Electrical Characteristics**

Ta = 25°C unless otherwise noted

V<sub>F</sub> Forward Voltage = 1.2V Maximum @ I<sub>F</sub> = 200 mA for all part numbers

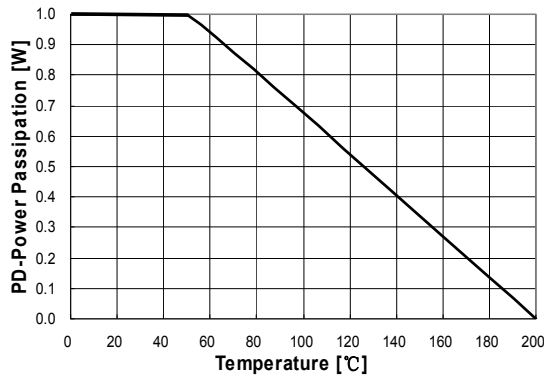
Part Number	Marking Code	V <sub>Z</sub> @ I <sub>ZT</sub> (Volt)			I <sub>ZT</sub> (mA)	Z <sub>ZT</sub> @ I <sub>ZT</sub> (Ω) Max	I <sub>ZK</sub> (mA)	Z <sub>ZK</sub> @ I <sub>ZK</sub> (Ω) Max	I <sub>R</sub> @ V <sub>R</sub> (μA) Max	V <sub>R</sub> (V)
		Min	Nom	Max						
BZX85C3V3	BZX85C3V3	3.1	3.3	3.5	80	20	1	400	40	1
BZX85C3V6	BZX85C3V6	3.4	3.6	3.8	60	20	1	500	20	1
BZX85C3V9	BZX85C3V9	3.7	3.9	4.1	60	15	1	500	20	1
BZX85C4V3	BZX85C4V3	4.1	4.3	4.5	50	13	1	500	3	1
BZX85C4V7	BZX85C4V7	4.5	4.7	4.9	45	13	1	600	3	1
BZX85C5V1	BZX85C5V1	4.8	5.1	5.4	45	10	1	500	1	1.5
BZX85C5V6	BZX85C5V6	5.3	5.6	5.9	45	7	1	400	1	2
BZX85C6V2	BZX85C6V2	5.9	6.2	6.5	35	4	1	300	1	3
BZX85C6V8	BZX85C6V8	6.5	6.8	7.1	35	3.5	1	300	1	4
BZX85C7V5	BZX85C7V5	7.1	7.5	7.9	35	3	0.5	200	1	4.5
BZX85C8V2	BZX85C8V2	7.8	8.2	8.6	25	5	0.5	200	1	6.2
BZX85C9V1	BZX85C9V1	8.6	9.1	9.6	25	5	0.5	200	1	6.9
BZX85C10	BZX85C10	9.5	10	10.5	25	7	0.5	200	0.5	7.5
BZX85C11	BZX85C11	10.5	11	11.6	20	8	0.5	300	0.5	8.2
BZX85C12	BZX85C12	11.4	12	12.6	20	9	0.5	350	0.5	9.1
BZX85C13	BZX85C13	12.4	13	13.7	20	10	0.5	400	0.5	10
BZX85C15	BZX85C15	14.3	15	15.8	15	15	0.5	500	0.5	11
BZX85C16	BZX85C16	15.2	16	16.8	15	15	0.5	500	0.5	12
BZX85C18	BZX85C18	17.1	18	18.9	15	20	0.5	500	0.5	13
BZX85C20	BZX85C20	19.0	20	21.0	10	24	0.5	600	0.5	15
BZX85C22	BZX85C22	20.9	22	23.1	10	25	0.5	600	0.5	16
BZX85C24	BZX85C24	22.8	24	25.2	10	25	0.5	600	0.5	18
BZX85C27	BZX85C27	25.7	27	28.4	8	30	0.25	750	0.5	20
BZX85C30	BZX85C30	28.5	30	31.5	8	30	0.25	1000	0.5	22
BZX85C33	BZX85C33	31.4	33	34.7	8	35	0.25	1000	0.5	24
BZX85C36	BZX85C36	34.2	36	37.8	8	40	0.25	1000	0.5	25
BZX85C39	BZX85C39	37.1	39	41.0	6	45	0.25	1000	0.5	27
BZX85C43	BZX85C43	40.9	43	45.2	6	50	0.25	1000	0.5	30
BZX85C47	BZX85C47	44.7	47	49.4	4	90	0.25	1500	0.5	33
BZX85C51	BZX85C51	48.5	51	53.6	4	115	0.25	1500	0.5	36
BZX85C56	BZX85C56	53.2	56	58.8	4	120	0.25	2000	0.5	39

**Notes:**

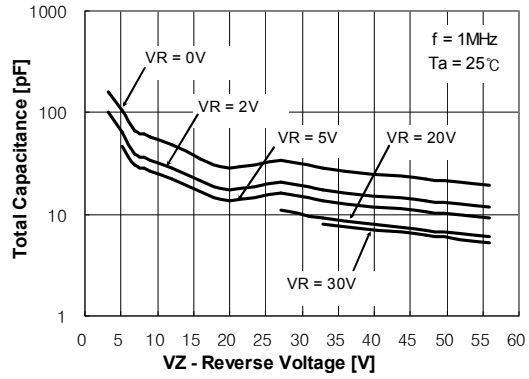
1. The Zener Voltage (V<sub>Z</sub>) is tested under pulse condition of 10ms.
2. The device numbers listed have a standard tolerance on the nominal zener voltage of **±5%**.
3. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest **Taiwan semiconductor** representative.
4. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the DC zener current (I<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed to I<sub>ZT</sub> or I<sub>ZK</sub>.

**Small Signal Diode**

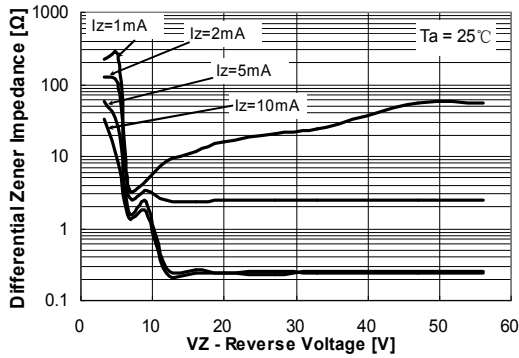
**Rating and Characteristic Curves**



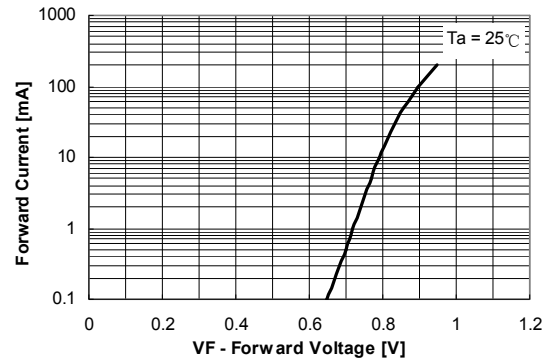
**Figure 1. Power Dissipation vs Ambient Temperature**  
 Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature



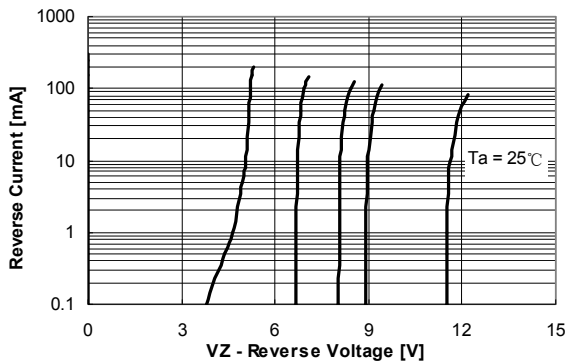
**Figure 2. Total Capacitance**



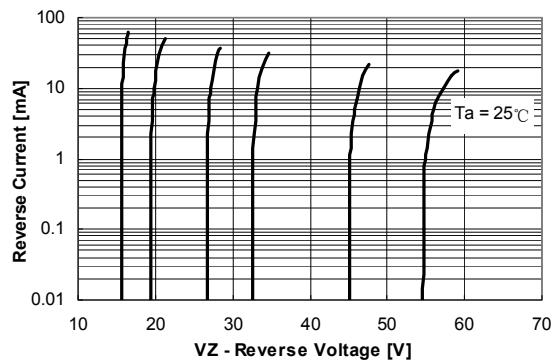
**Figure 3. Differential Impedance vs. Zener Voltage**



**Figure 4. Forward Current vs. Forward Voltage**



**Figure 5. Reverse Current vs. Reverse Voltage**



**Figure 6. Reverse Current vs. Reverse Voltage**